

ONOE et al.
Serial No.: 10/615,404
Response to Office Action of September 9, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

Claims 1-24 (Canceled).

Claim 25 (New): A dielectric recording medium comprising:
a substrate;
an electrode disposed on the substrate; and
a dielectric material disposed on the electrode, wherein
the dielectric recording medium is disk-shaped,
the dielectric material is divided into an inner area, an outer area and a data area,
the inner area and the outer area have respective predetermined widths,
the data area is located between the inner area and the outer area, and
polarization directions of each of the inner area and the outer area are set in the opposite
direction to a polarization direction of the data area.

Claim 26 (New): A dielectric recording medium comprising:
a substrate;
an electrode disposed on the substrate; and
a dielectric material disposed on the electrode, wherein
the dielectric material includes a recording area for recording data,
the recording area includes tracks,
any one of the tracks includes a control information area,
a pit for tracking is recorded in the control information area, and
the pit for tracking is recorded by polarizing the dielectric material.

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Claim 27 (New): The dielectric recording medium according to claim 26, wherein the dielectric recording medium is disk-shaped, the dielectric material is divided into an inner area, an outer area and the recording area, the inner area and the outer area have respective predetermined widths, and the recording area is located between the inner area and the outer area.

Claim 28 (New): The dielectric recording medium according to claim 26, wherein the tracks include a first track, a second track and a third track, the first track, the second track and the third track are located such that the first track is sandwiched between the second track and the third track, the pit for tracking is recorded on the first track, a plurality of pits polarized in a positive direction and a plurality of pits polarized in a negative direction are alternately arranged on each of the second track and the third track, each of the plurality of pits on the second track and each of the plurality of pits on the third track are located so as to face each other, and a polarization direction is different between each of the plurality of pits on the second track and each of the plurality of pits on the third track which face each other.

Claim 29 (New): The dielectric recording medium according to claim 26, wherein the recording area is divided into a plurality of zones, and the pit for tracking is recorded in each of the plurality of zones.

Claim 30 (New): A dielectric recording apparatus for performing a data recording process of recording data in a dielectric recording medium, the dielectric recording medium comprising a substrate, an electrode disposed on the substrate, and a dielectric material disposed on the electrode, the dielectric material including a recording area for recording data, the recording area including tracks, any one of the tracks including a control information area, a pit for tracking being recorded in the control information area, the pit for tracking being recorded by polarizing the dielectric material,

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the tracks including a first track, a second track and a third track, the first track, the second track and the third track being located such that the first track is sandwiched between the second track and the third track, the pit for tracking being recorded on the first track, a plurality of pits polarized in a positive direction and a plurality of pits polarized in a negative direction being alternately arranged on each of the second track and the third track, each of the plurality of pits on the second track and each of the plurality of pits on the third track being located so as to face each other, a polarization direction being different between each of the plurality of pits on the second track and each of the plurality of pits on the third track which face each other,

the apparatus comprising:

a head including a probe for recording the data on the tracks and reading a tracking error signal from the tracks,

a tracking error detector for detecting the tracking error signal read by the probe; and

a tracking mechanism for controlling a position of the probe such that the probe traces one of the tracks, wherein

the tracking mechanism controls the position of the probe on the basis of a phase and an amplitude of the tracking error signal, and

the phase and amplitude of the tracking error signal are created by the pit for tracking on the first track, the arrangement of the plurality of pits on the second track and the arrangement of the plurality of pits on the third track.

Claim 31 (New): The dielectric recording apparatus according to claim 30, wherein the recording area of the dielectric recording medium is divided into a plurality of zones, and pits for tracking are recorded in each of the plurality of zones, and

the head includes a plurality of probes for simultaneously recording the data into the plurality of zones and simultaneously reading the tracking error signals from the plurality of zones.

Claim 32 (New): A dielectric reproducing apparatus for performing a data reproducing process of reproducing data recorded in a dielectric recording medium,

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the dielectric recording medium comprising a substrate, an electrode disposed on the substrate, and a dielectric material disposed on the electrode,

the dielectric material including a recording area for recording data, the recording area including tracks, any one of the tracks including a control information area, a pit for tracking being recorded in the control information area, the pit for tracking being recorded by polarizing the dielectric material,

the tracks including a first track, a second track and a third track, the first track, the second track and the third track being located such that the first track is sandwiched between the second track and the third track, the pit for tracking being recorded on the first track, a plurality of pits polarized in a positive direction and a plurality of pits polarized in a negative direction being alternately arranged on each of the second track and the third track, each of the plurality of pits on the second track and each of the plurality of pits on the third track being located so as to face each other, a polarization direction being different between each of the plurality of pits on the second track and each of the plurality of pits on the third track which face each other,

the apparatus comprising:

a head including a probe for reproducing the data on the tracks and reading a tracking error signal from the tracks,

a tracking error detector for detecting the tracking error signal read by the probe; and

a tracking mechanism for controlling a position of the probe such that the probe traces one of the tracks, wherein

the tracking mechanism controls the position of the probe on the basis of a phase and an amplitude of the tracking error signal, and

the phase and amplitude of the tracking error signal are created by the pit for tracking on the first track, the arrangement of the plurality of pits on the second track and the arrangement of the plurality of pits on the third track.

Claim 33 (New): The dielectric reproducing apparatus according to claim 32, wherein

the recording area of the dielectric recording medium is divided into a plurality of zones, and pits for tracking are recorded in each of the plurality of zones, and

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the head includes a plurality of probes for simultaneously reproducing the data from the plurality of zones and simultaneously reading the tracking error signals from the plurality of zones.